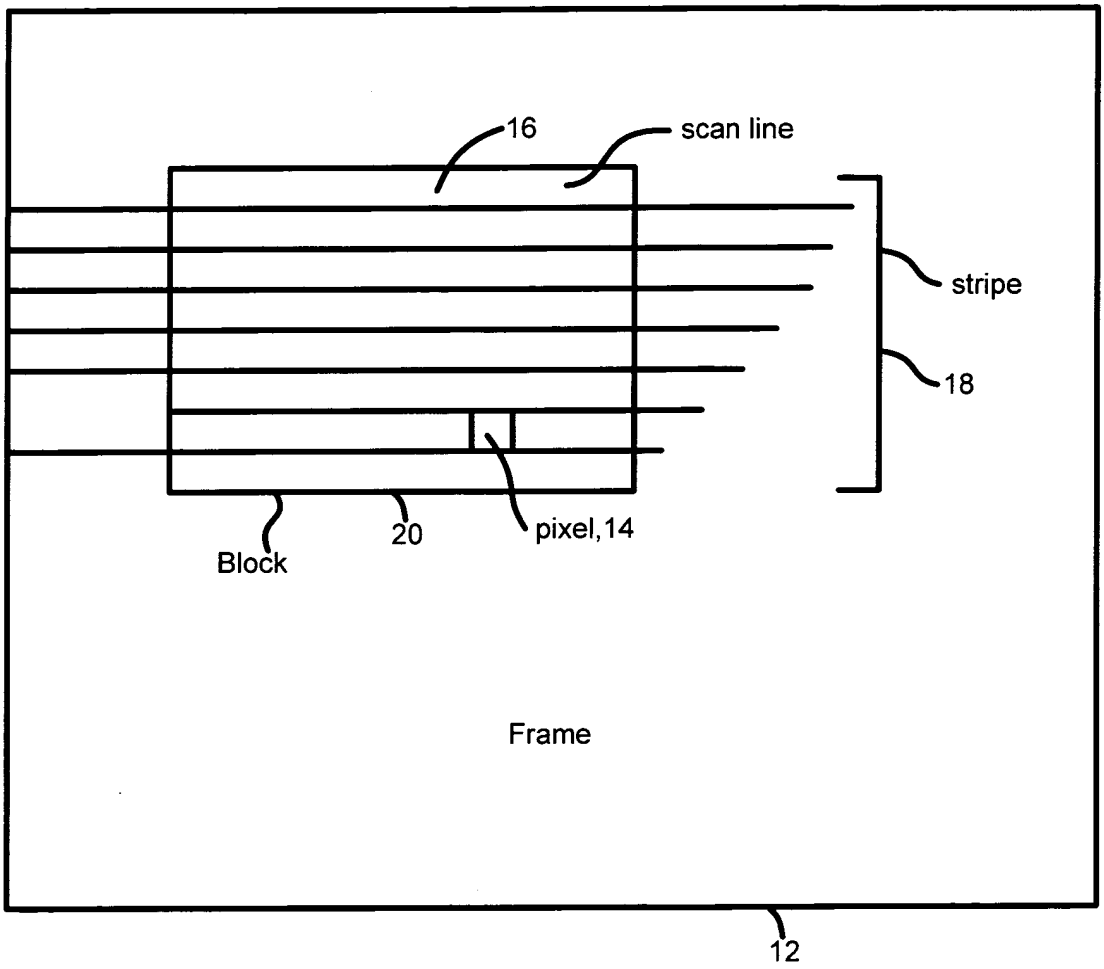
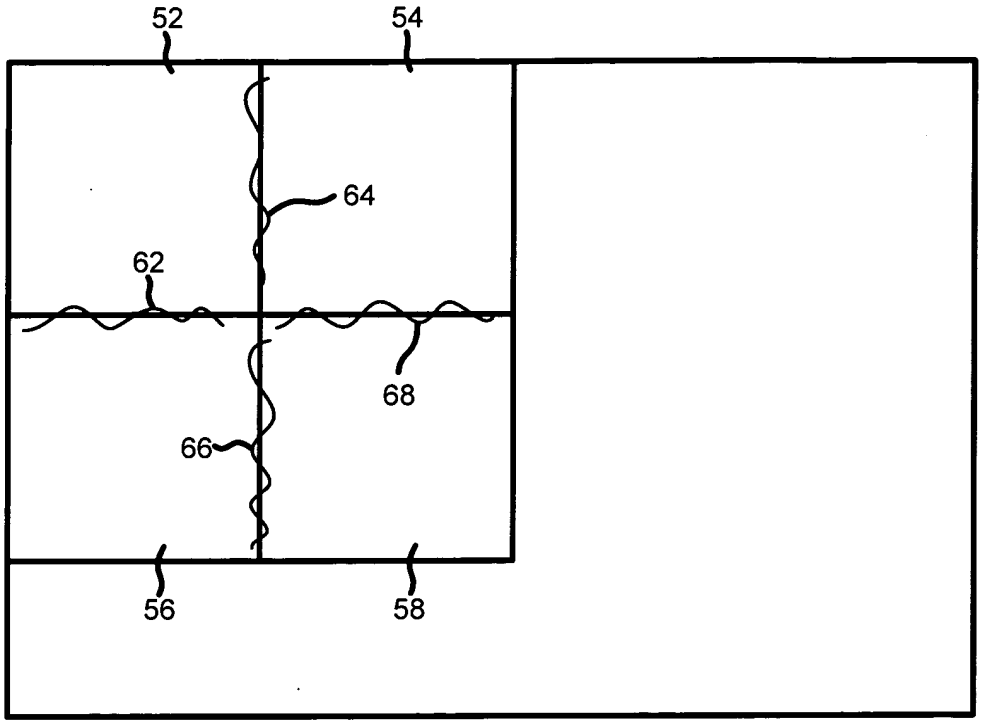


Fig. 1
(prior art)



50

Fig. 2
(prior art)

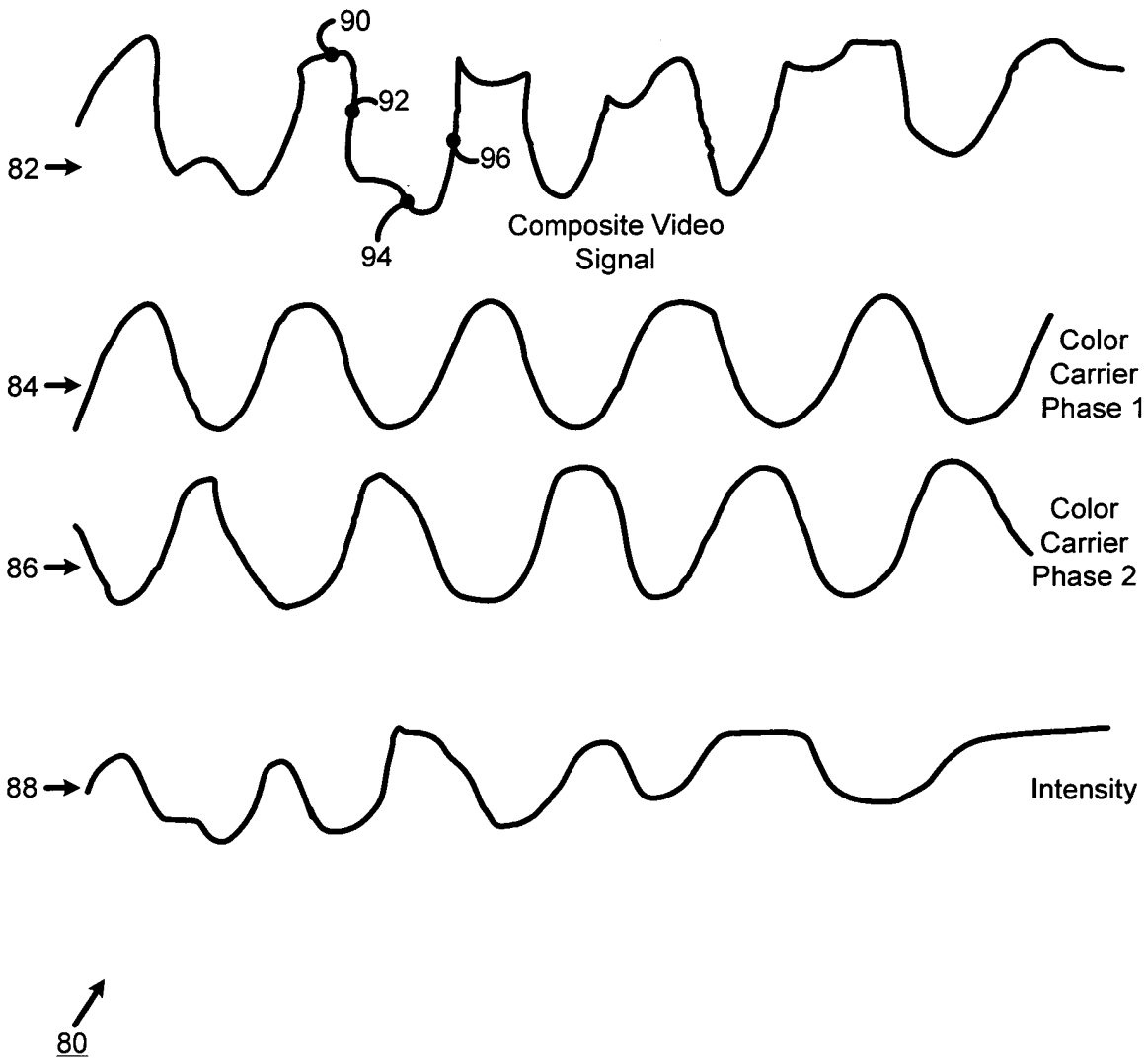


FIG. 3
(prior art)

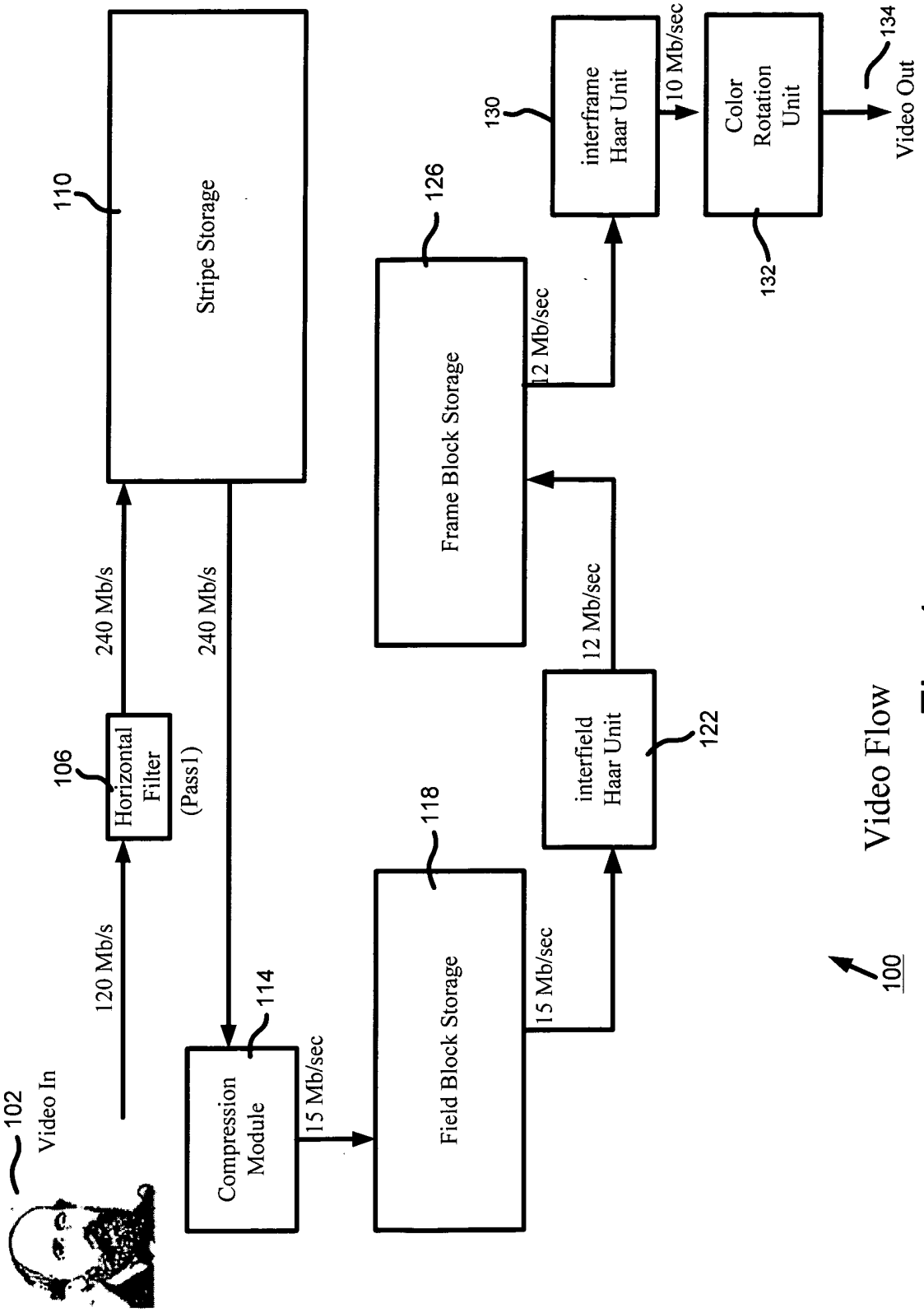

102
Video In
120 Mb/s
106
Horizontal Filter
(Pass1)
240 Mb/s
110
Stripe Storage
240 Mb/s
114
Compression Module
15 Mb/sec
118
Field Block Storage
15 Mb/sec
122
interfield Haar Unit
12 Mb/sec
126
Frame Block Storage
12 Mb/sec
130
interframe Haar Unit
10 Mb/sec
132
Color Rotation Unit
134
Video Out
100
Video Flow

Fig. 4

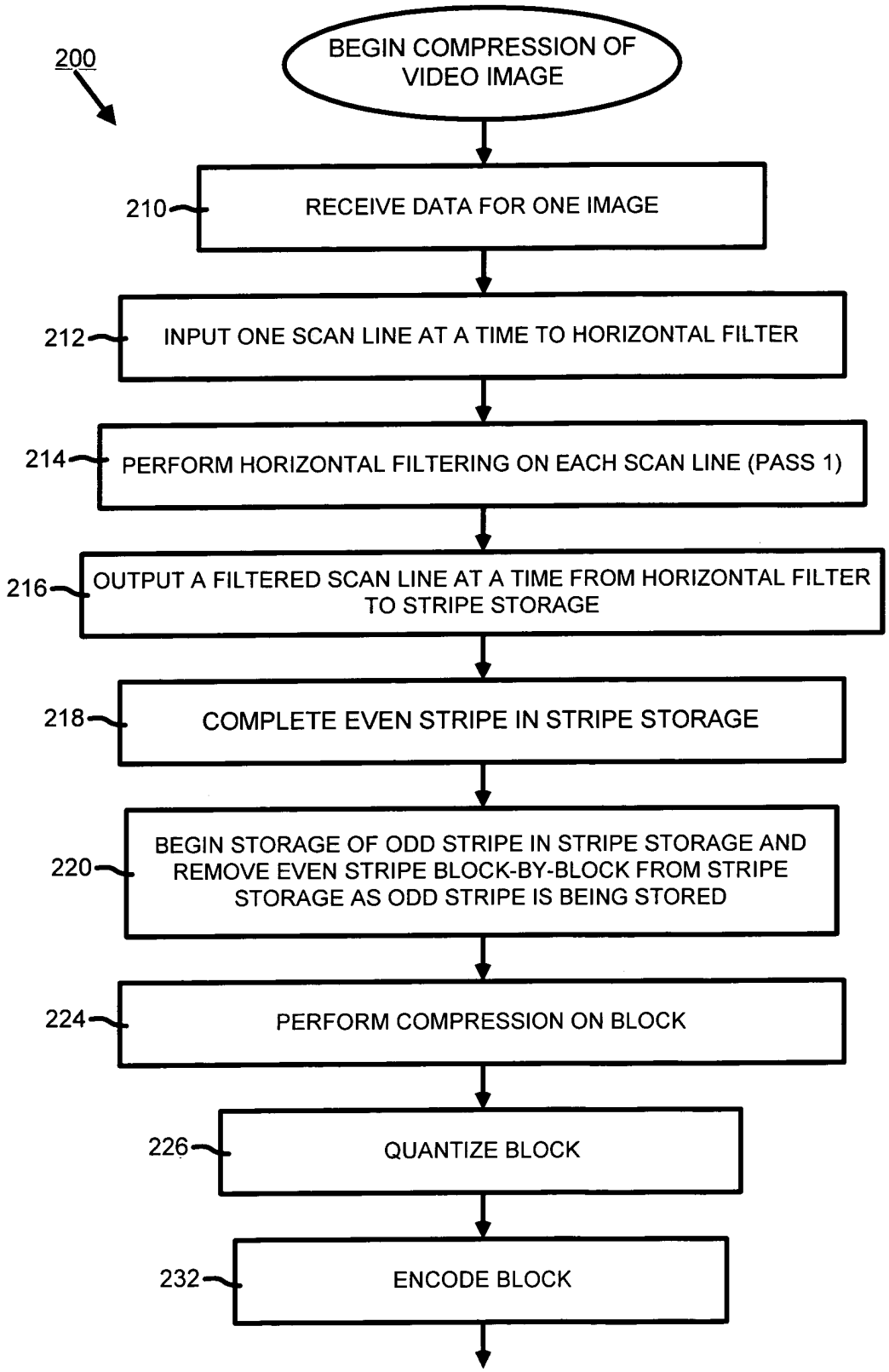

200
BEGIN COMPRESSION OF VIDEO IMAGE
210
RECEIVE DATA FOR ONE IMAGE
212
INPUT ONE SCAN LINE AT A TIME TO HORIZONTAL FILTER
214
PERFORM HORIZONTAL FILTERING ON EACH SCAN LINE (PASS 1)
216
OUTPUT A FILTERED SCAN LINE AT A TIME FROM HORIZONTAL FILTER TO STRIPE STORAGE
218
COMPLETE EVEN STRIPE IN STRIPE STORAGE
220
BEGIN STORAGE OF ODD STRIPE IN STRIPE STORAGE AND REMOVE EVEN STRIPE BLOCK-BY-BLOCK FROM STRIPE STORAGE AS ODD STRIPE IS BEING STORED
224
PERFORM COMPRESSION ON BLOCK
226
QUANTIZE BLOCK
232
ENCODE BLOCK

FIG. 5A

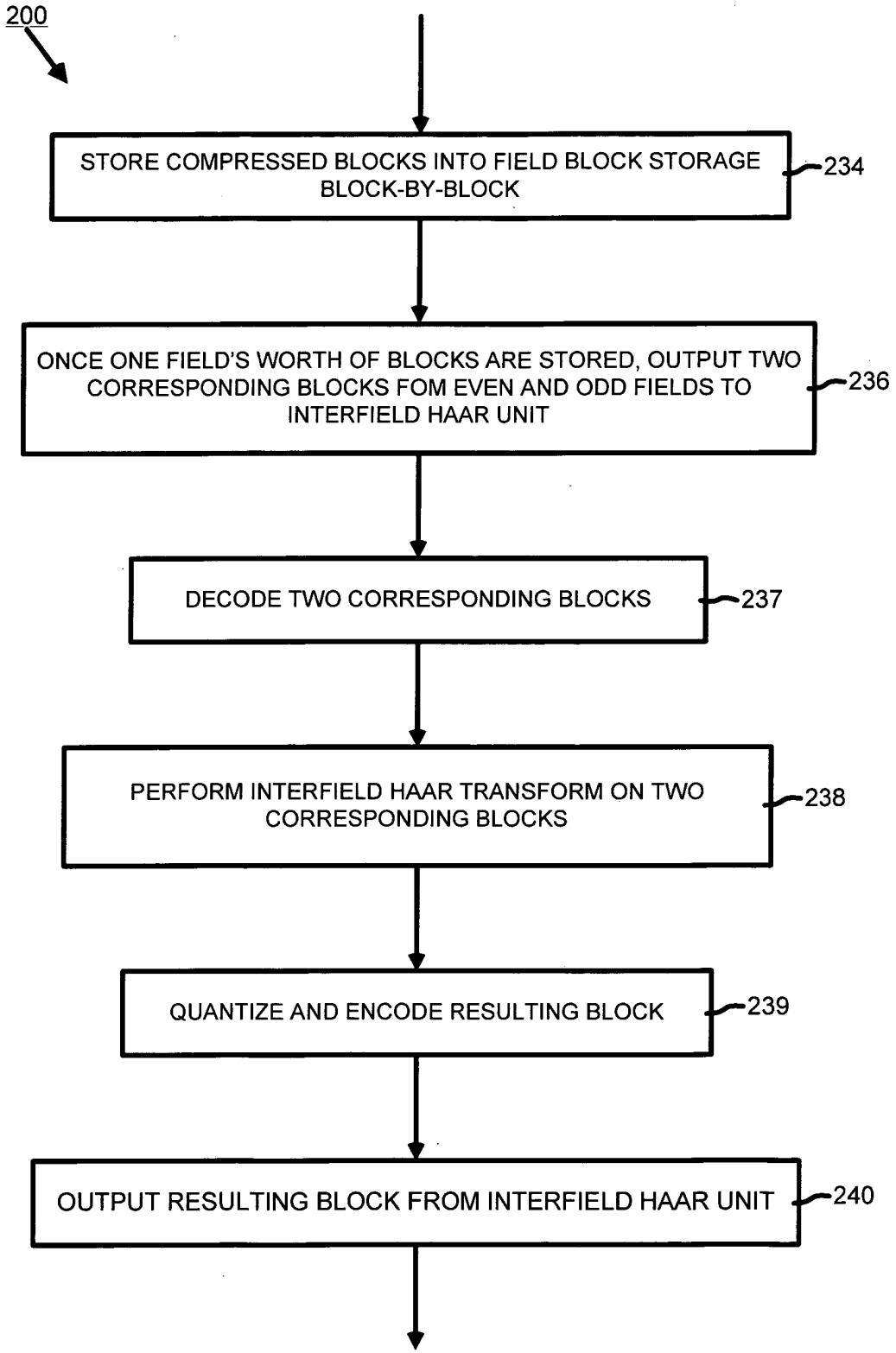

200
STORE COMPRESSED BLOCKS INTO FIELD BLOCK STORAGE BLOCK-BY-BLOCK
234
ONCE ONE FIELD'S WORTH OF BLOCKS ARE STORED, OUTPUT TWO CORRESPONDING BLOCKS FOM EVEN AND ODD FIELDS TO INTERFIELD HAAR UNIT
236
DECODE TWO CORRESPONDING BLOCKS
237
PERFORM INTERFIELD HAAR TRANSFORM ON TWO CORRESPONDING BLOCKS
238
QUANTIZE AND ENCODE RESULTING BLOCK
239
OUTPUT RESULTING BLOCK FROM INTERFIELD HAAR UNIT
240

FIG. 5B

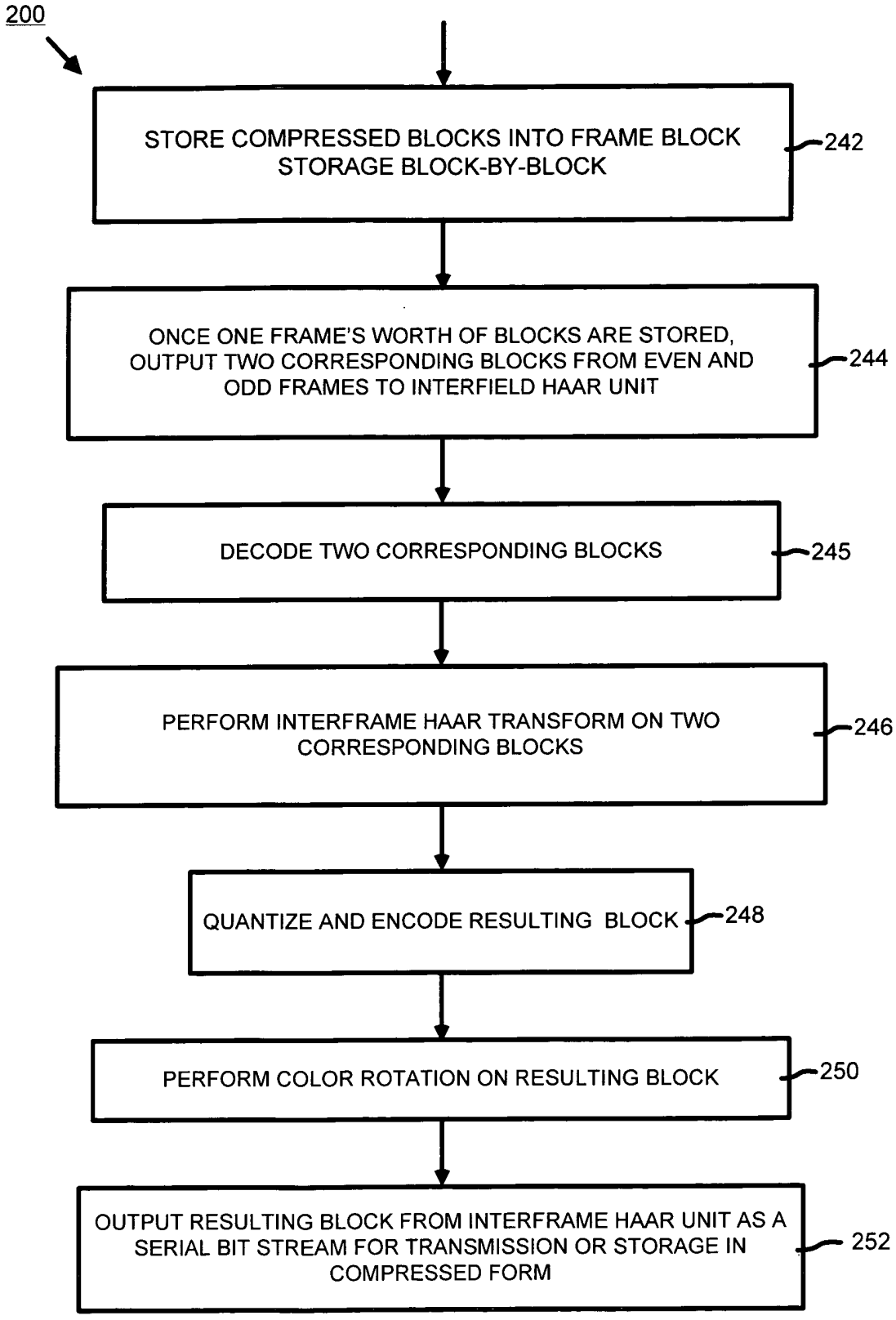

200
STORE COMPRESSED BLOCKS INTO FRAME BLOCK STORAGE BLOCK-BY-BLOCK
242
ONCE ONE FRAME'S WORTH OF BLOCKS ARE STORED, OUTPUT TWO CORRESPONDING BLOCKS FROM EVEN AND ODD FRAMES TO INTERFIELD HAAR UNIT
244
DECODE TWO CORRESPONDING BLOCKS
245
PERFORM INTERFRAME HAAR TRANSFORM ON TWO CORRESPONDING BLOCKS
246
QUANTIZE AND ENCODE RESULTING BLOCK
248
PERFORM COLOR ROTATION ON RESULTING BLOCK
250
OUTPUT RESULTING BLOCK FROM INTERFRAME HAAR UNIT AS A SERIAL BIT STREAM FOR TRANSMISSION OR STORAGE IN COMPRESSED FORM
252

FIG. 5C

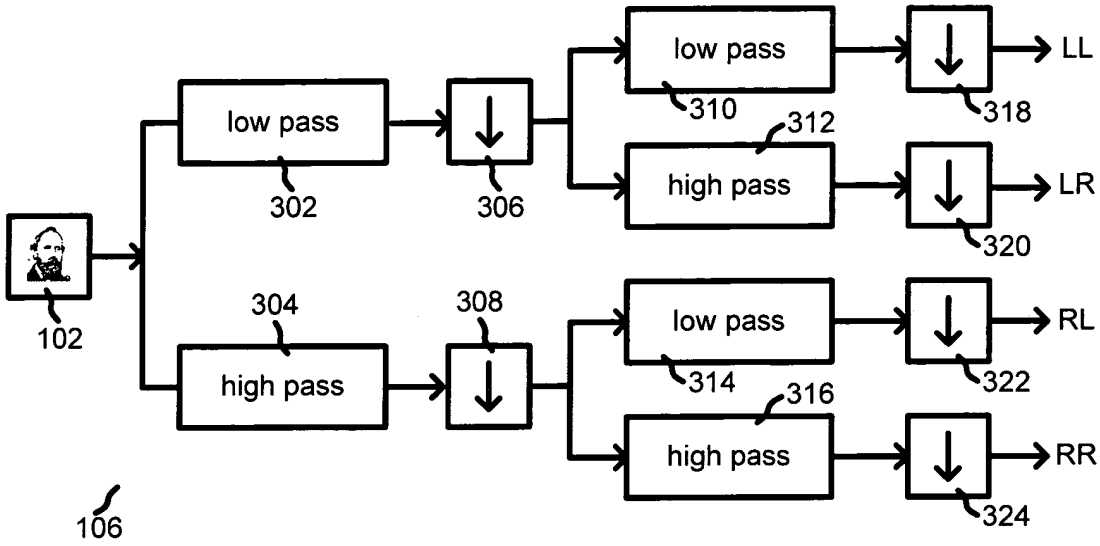


FIG. 6

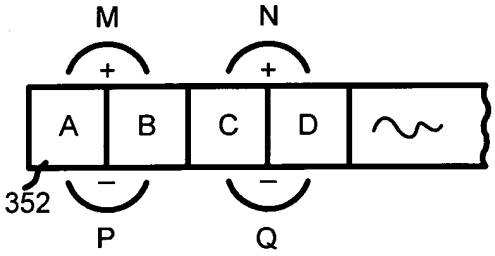


FIG. 7

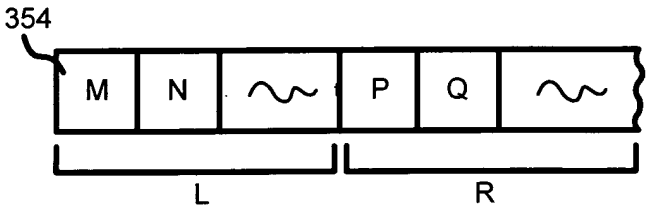


FIG. 8

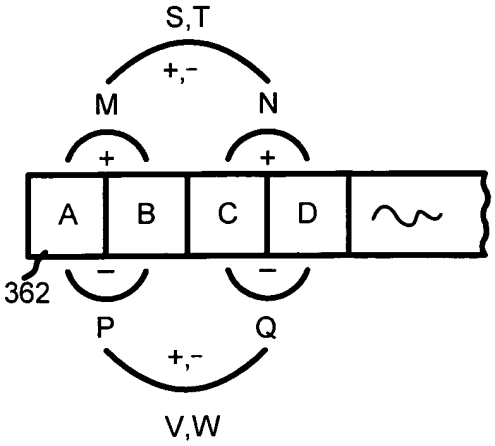


FIG. 9

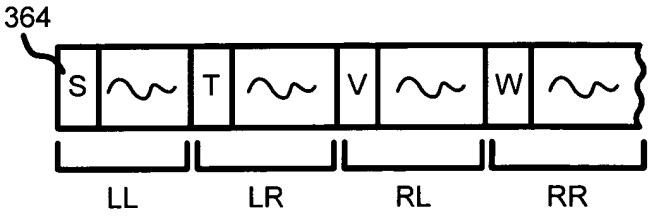


FIG. 10

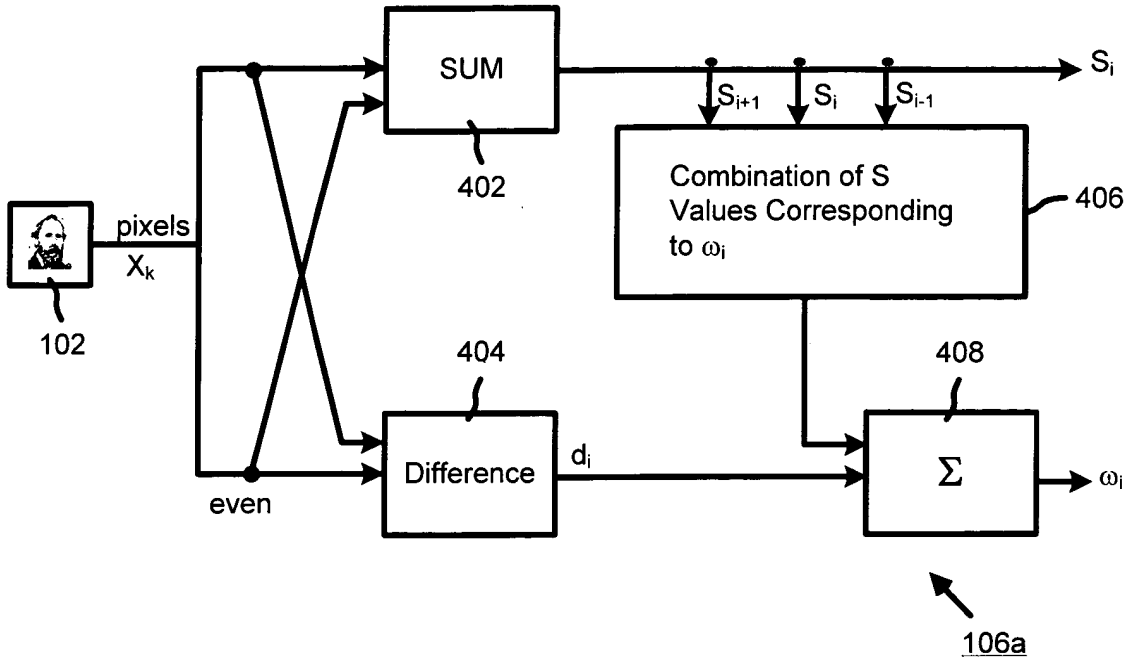


FIG. 11A

	$S_\emptyset$	S_1	S_2	S_3	S_4	S_5	• • •	S_{n-4}	S_{n-3}	S_{n-2}	S_{n-1}	
ω_0	-3/8	1/2	-1/8									420
ω_1	-1/8	Ø	1/8									422
ω_2		-1/8	0	1/8								424
ω_3			-1/8	0	1/8							426
•												
•												428
•												
ω_{n-3}								-1/8	0	1/8		430
ω_{n-2}									-1/8	0	1/8	432
ω_{n-1}									1/8	-1/2	3/8	434

412

409

FIG. 11B

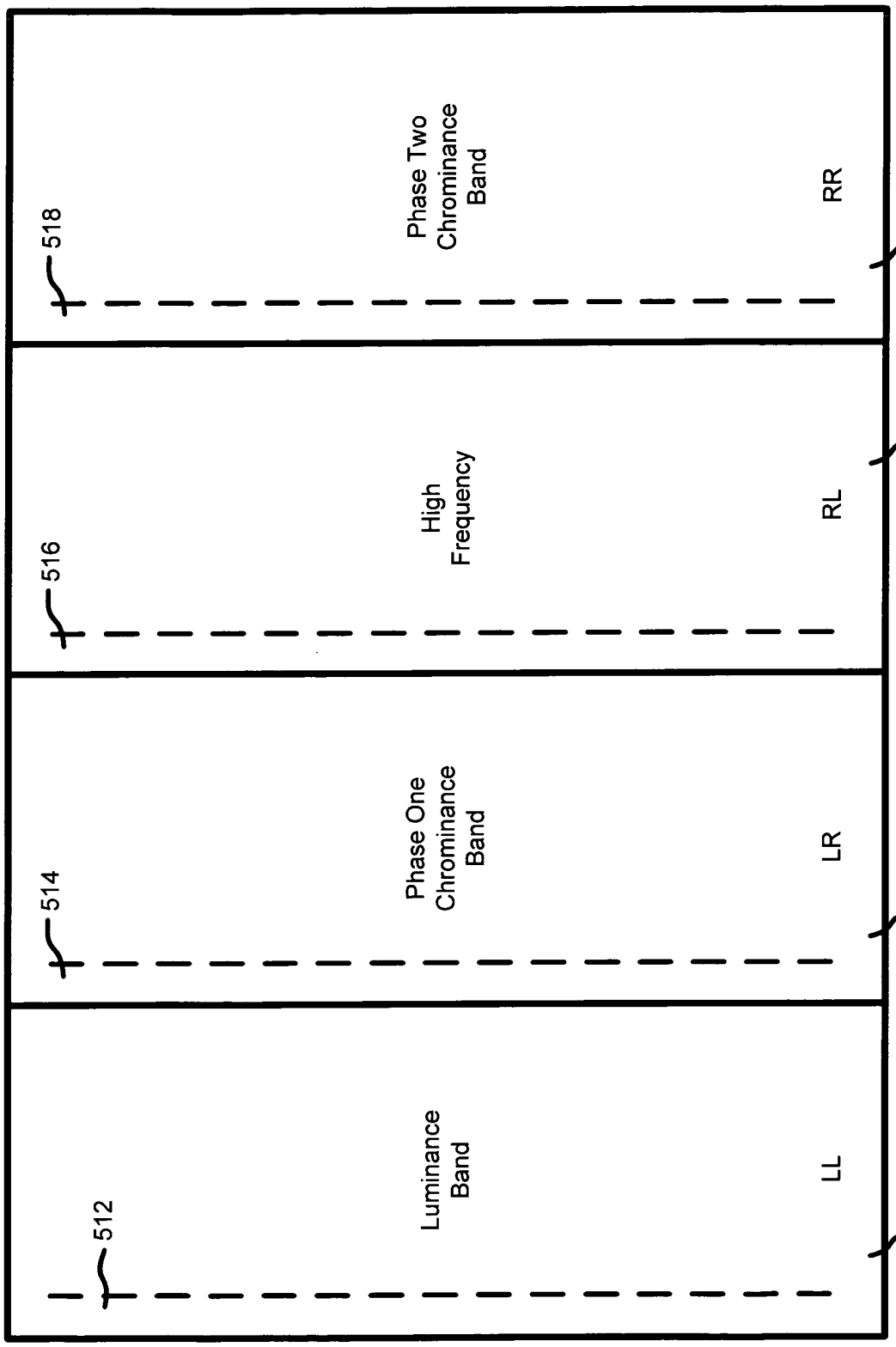


FIG. 12
Stripe After Horizontal Filtering

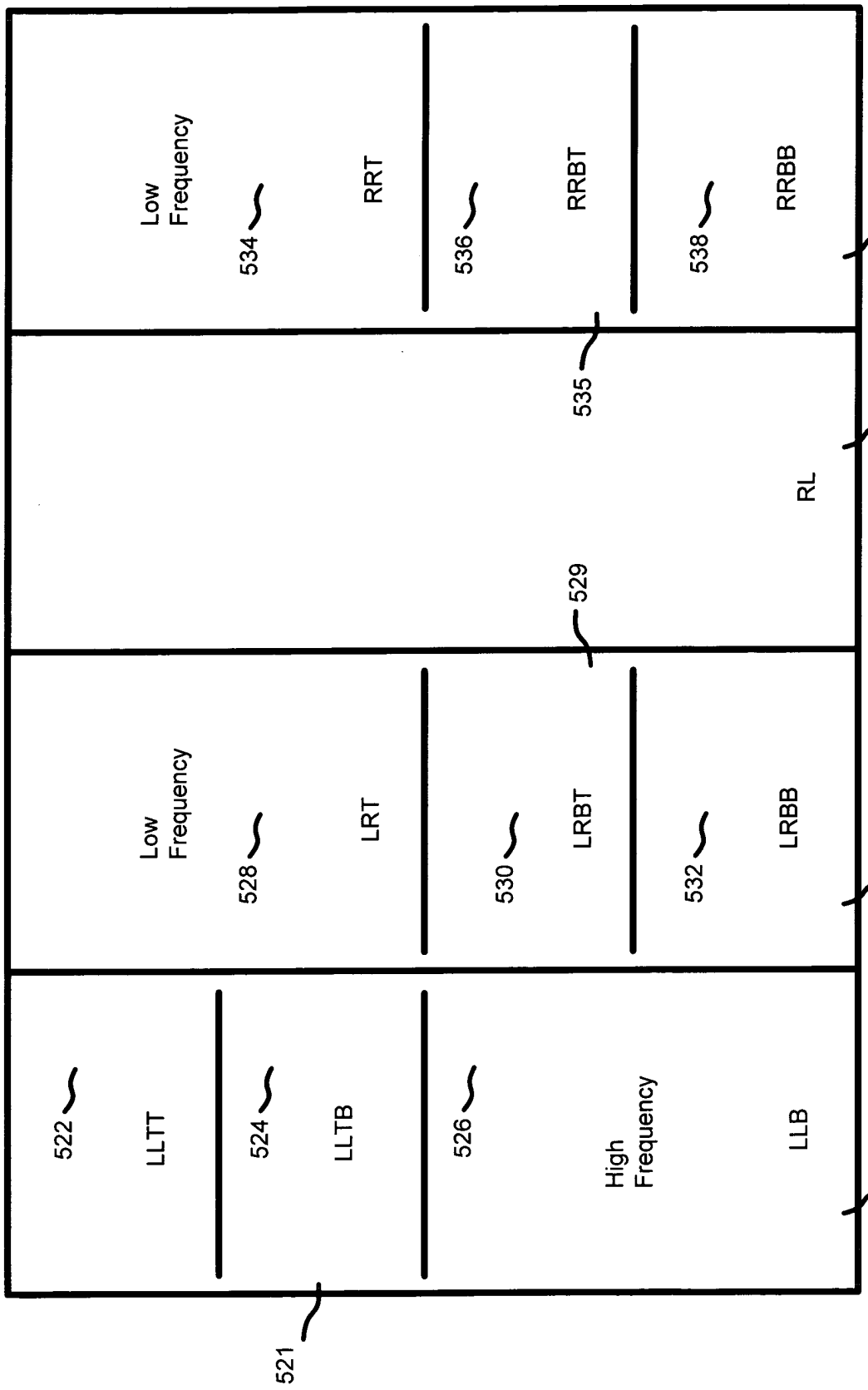


FIG. 13
Block After Pass 2 Filtering

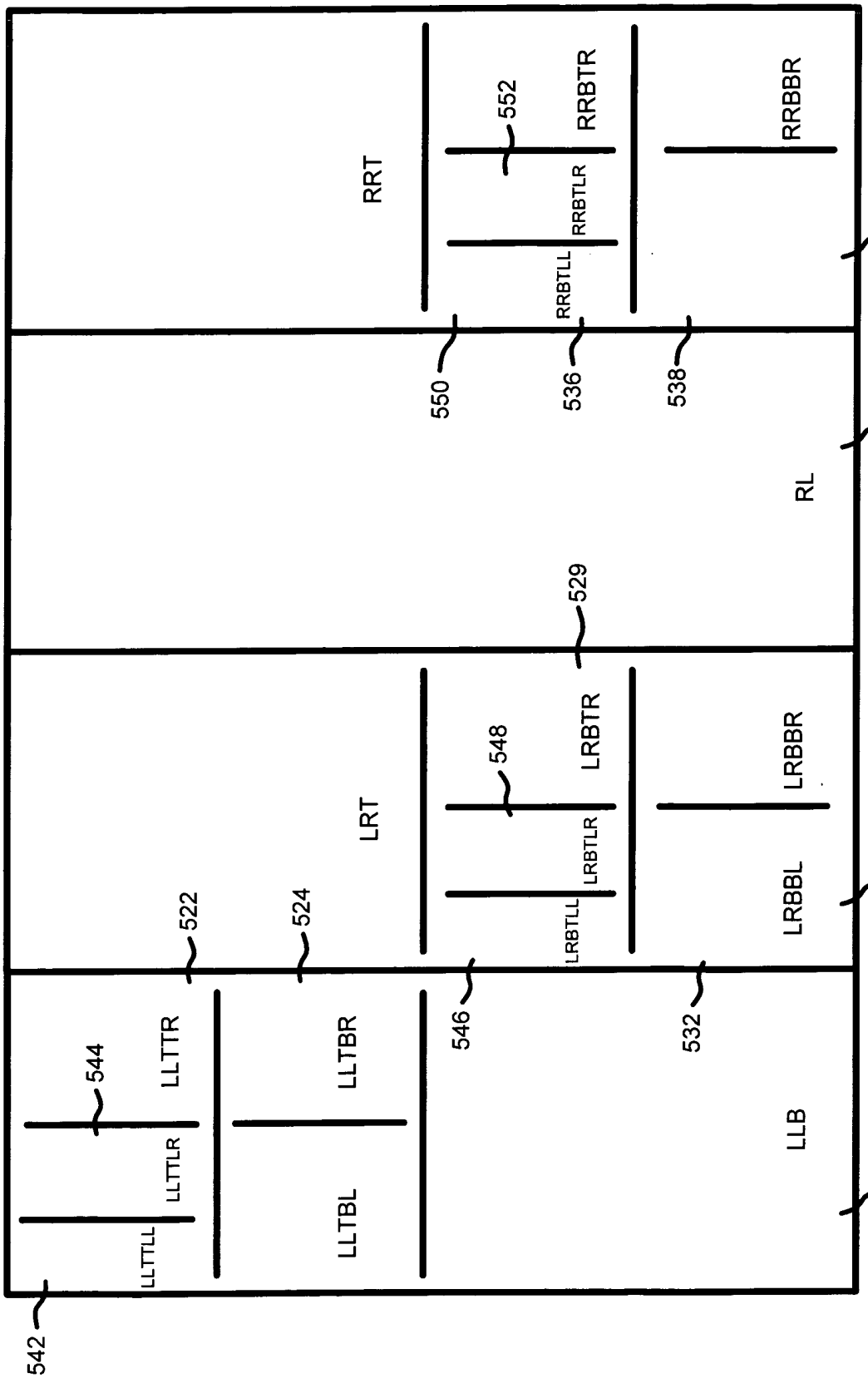


FIG. 14
Block After Pass 3 Filtering

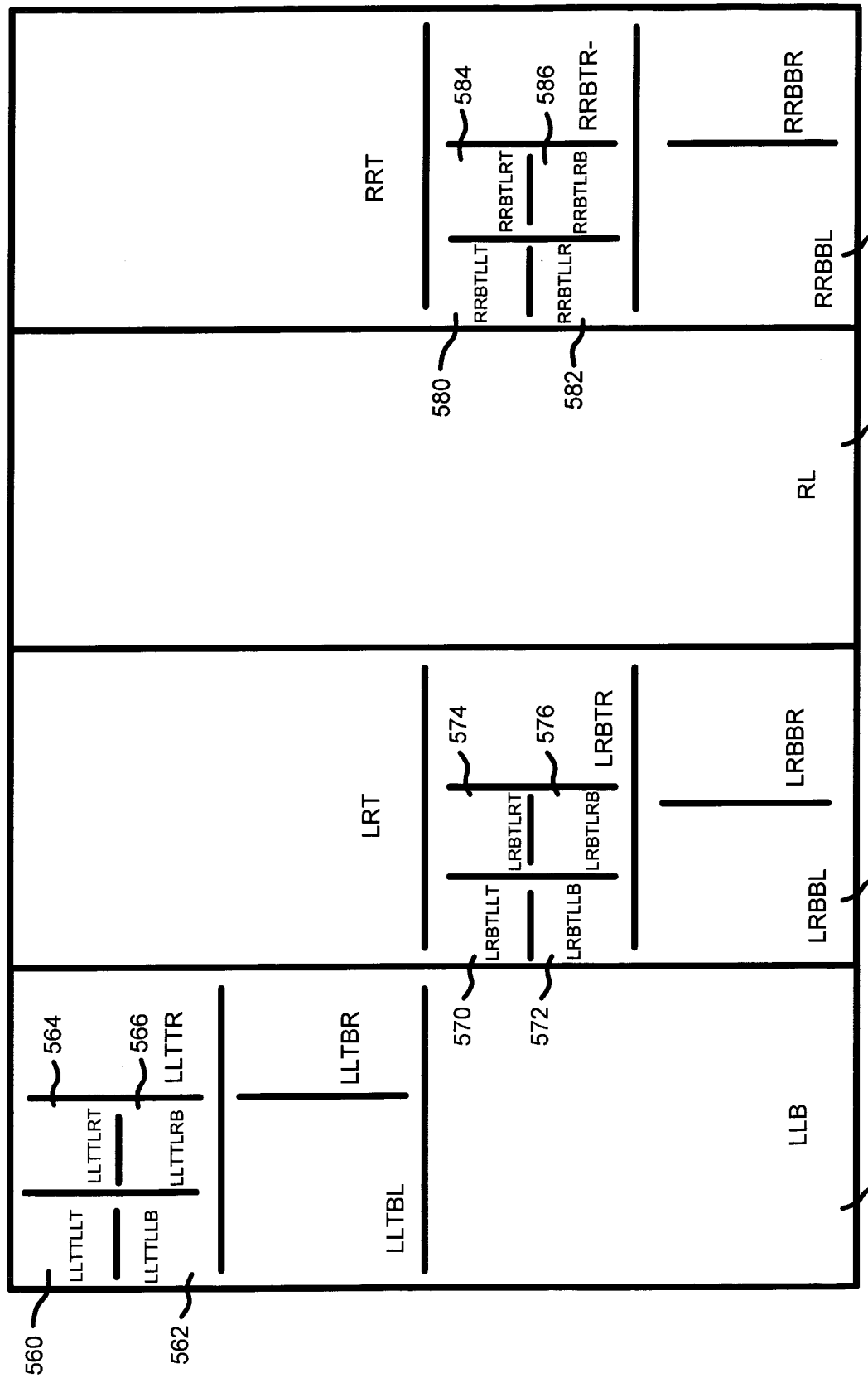


FIG. 15
Block After Pass 4 Filtering

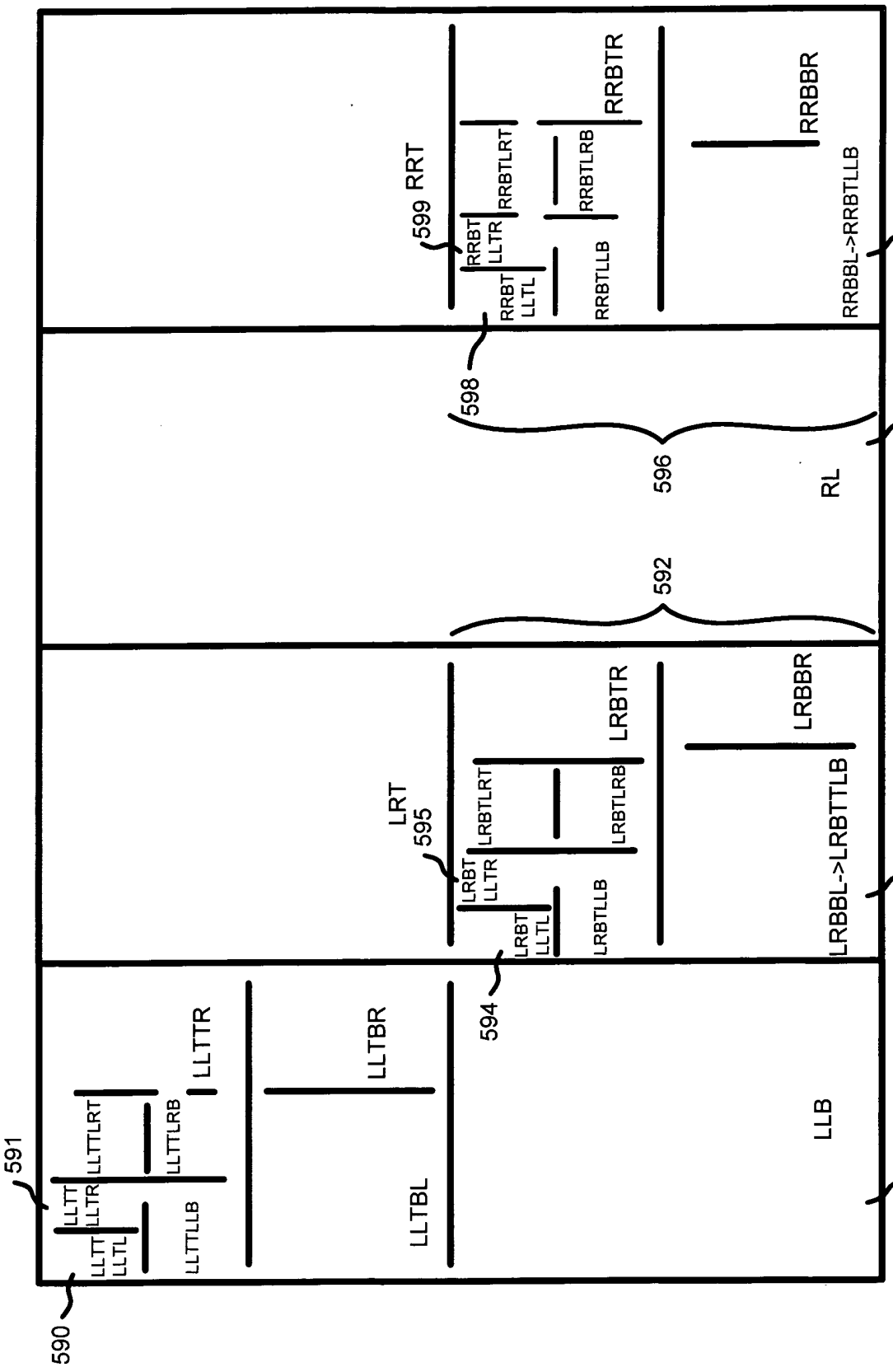


FIG. 16
Block After Pass 5 Filtering

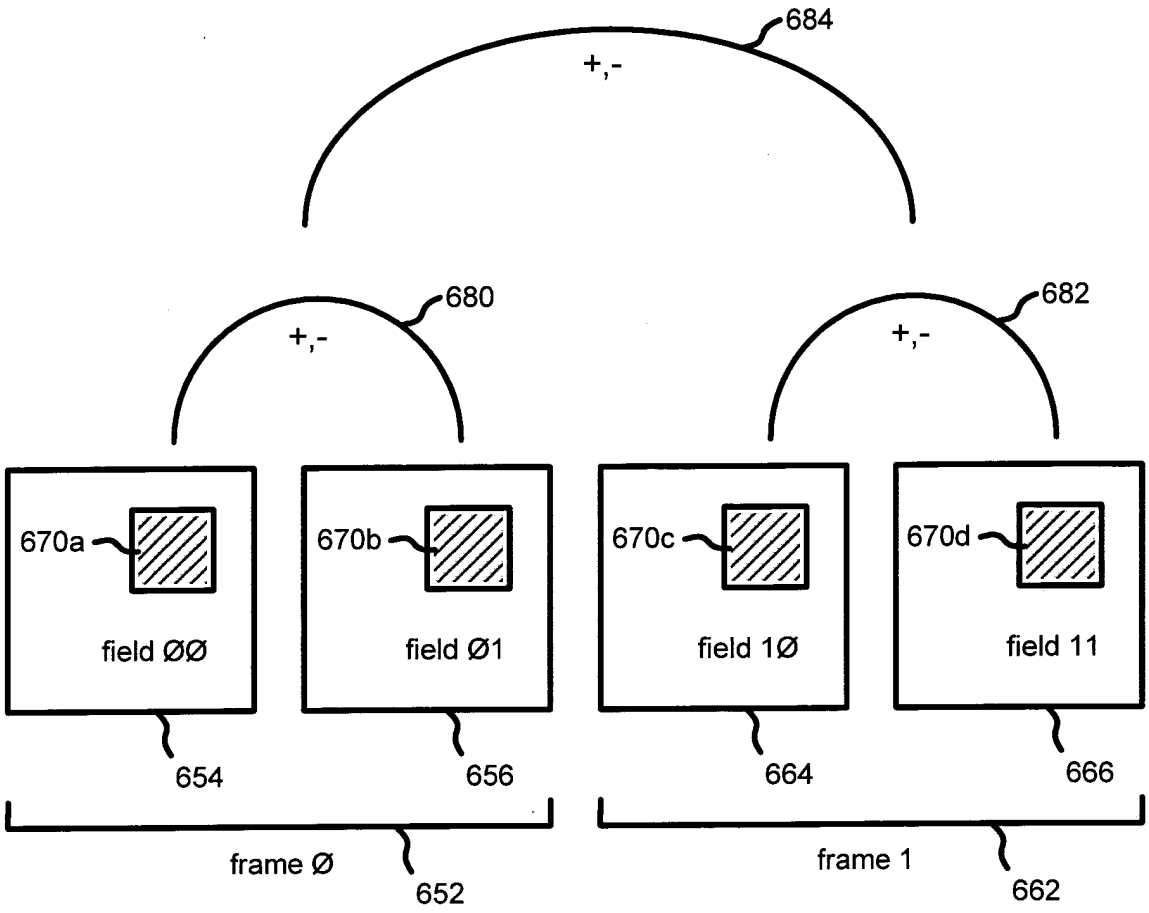

684
+,-
680
+,-
682
+,-
670a
670b
670c
670d
field ØØ
field Ø1
field 1Ø
field 11
654
656
664
666
frame Ø
652
frame 1
662

FIG.17

650

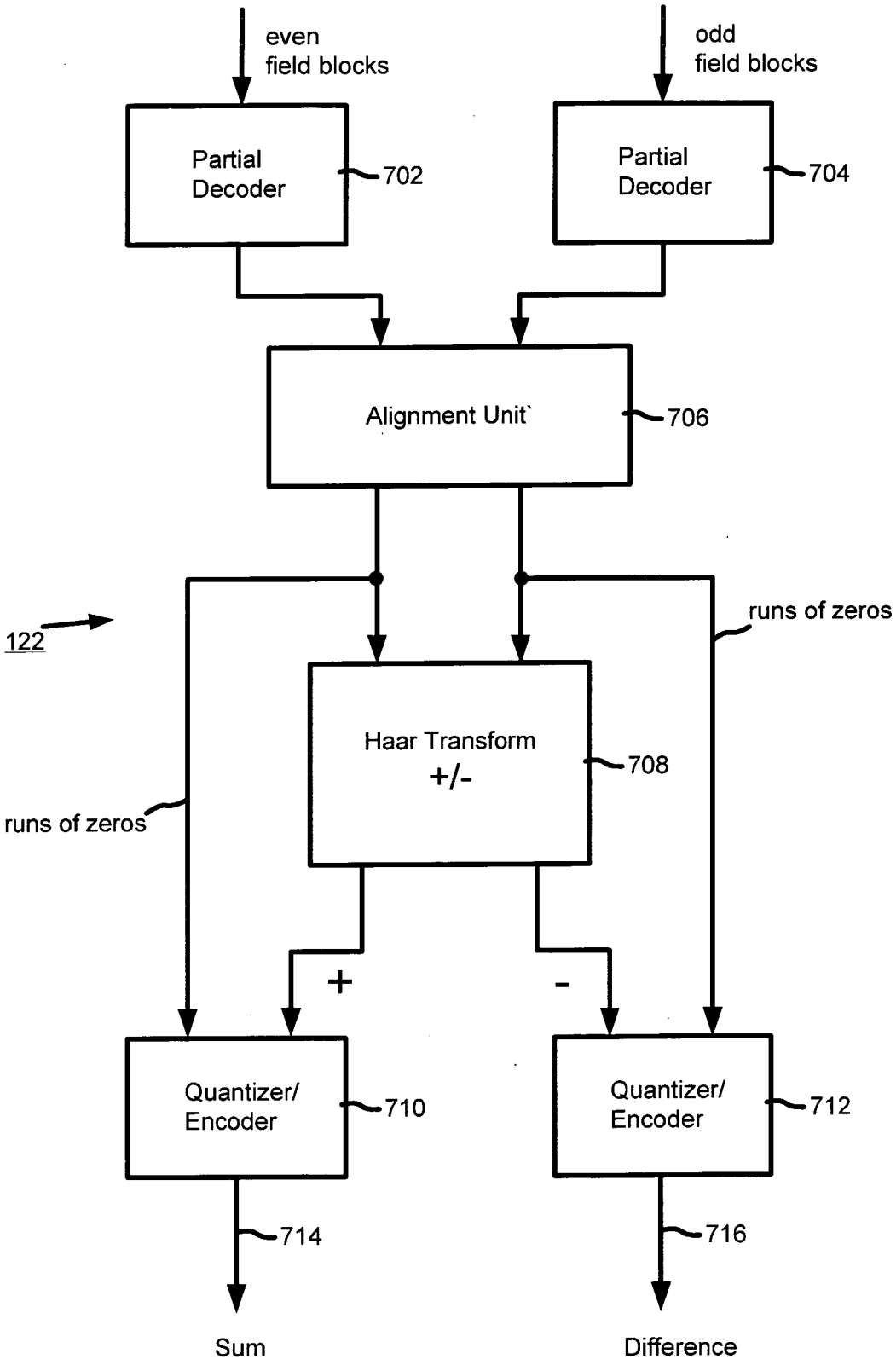

even
field blocks
odd
field blocks
Partial
Decoder
702
Partial
Decoder
704
Alignment Unit
706
122
runs of zeros
Haar Transform
+/-
708
runs of zeros
+
-
Quantizer/
Encoder
710
Quantizer/
Encoder
712
714
716
Sum
Difference

FIG. 18

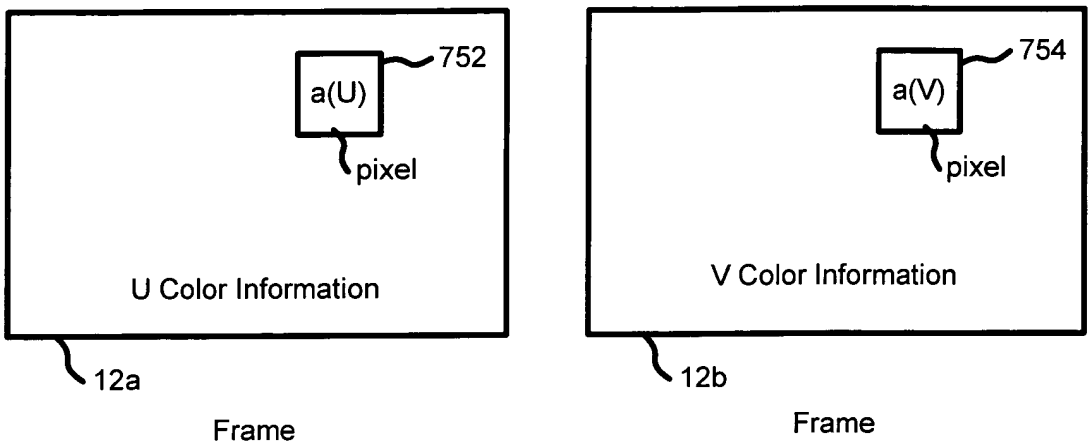


FIG. 19 (prior art)

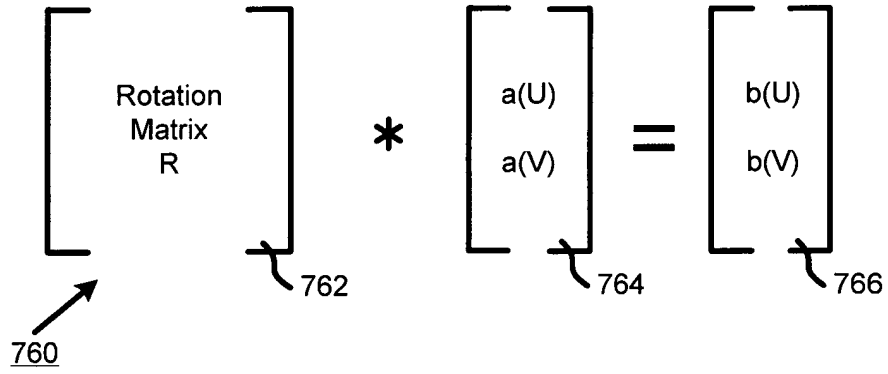


FIG. 20 (prior art)

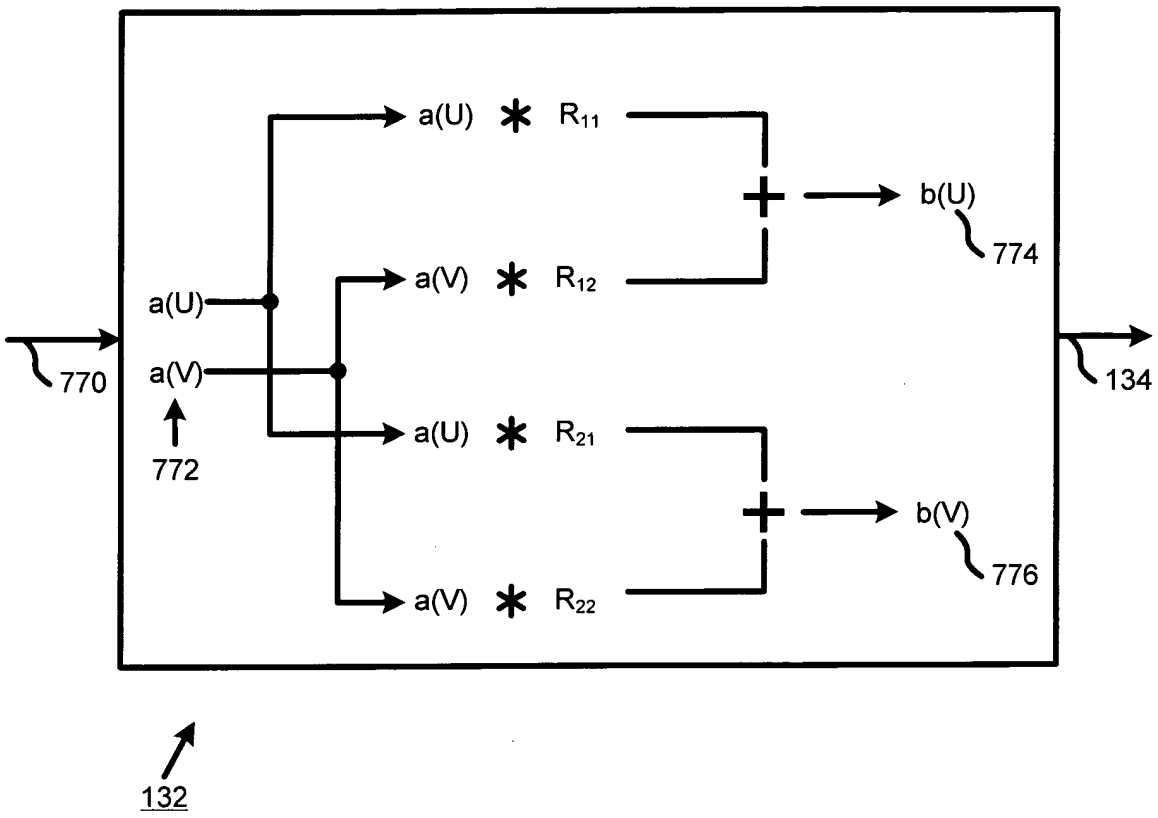


FIG. 21

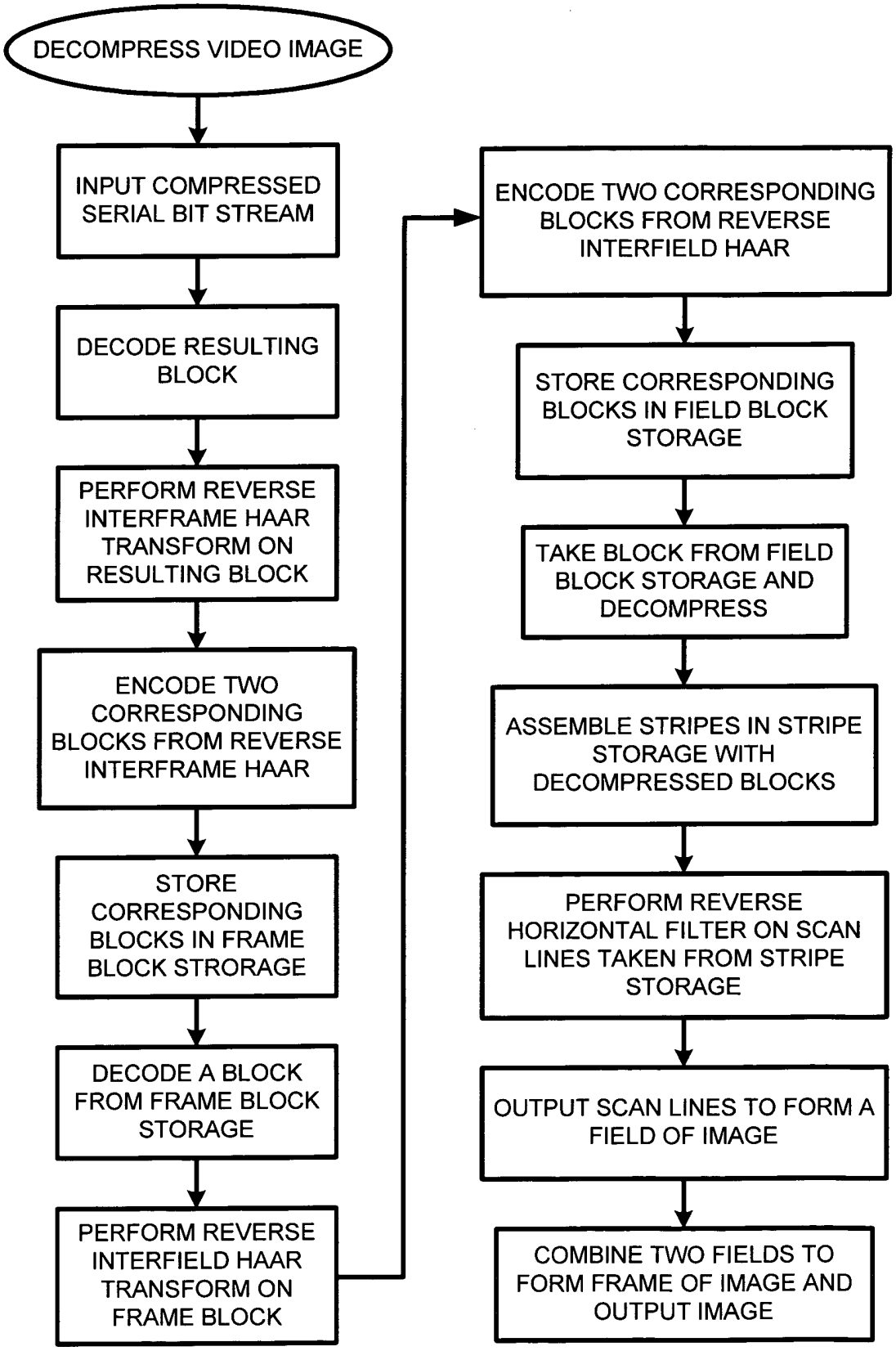

DECOMPRESS VIDEO IMAGE
INPUT COMPRESSED SERIAL BIT STREAM
DECODE RESULTING BLOCK
PERFORM REVERSE INTERFRAME HAAR TRANSFORM ON RESULTING BLOCK
ENCODE TWO CORRESPONDING BLOCKS FROM REVERSE INTERFRAME HAAR
STORE CORRESPONDING BLOCKS IN FRAME BLOCK STRORAGE
DECODE A BLOCK FROM FRAME BLOCK STORAGE
PERFORM REVERSE INTERFIELD HAAR TRANSFORM ON FRAME BLOCK
ENCODE TWO CORRESPONDING BLOCKS FROM REVERSE INTERFIELD HAAR
STORE CORRESPONDING BLOCKS IN FIELD BLOCK STORAGE
TAKE BLOCK FROM FIELD BLOCK STORAGE AND DECOMPRESS
ASSEMBLE STRIPES IN STRIPE STORAGE WITH DECOMPRESSED BLOCKS
PERFORM REVERSE HORIZONTAL FILTER ON SCAN LINES TAKEN FROM STRIPE STORAGE
OUTPUT SCAN LINES TO FORM A FIELD OF IMAGE
COMBINE TWO FIELDS TO FORM FRAME OF IMAGE AND OUTPUT IMAGE

FIG.22

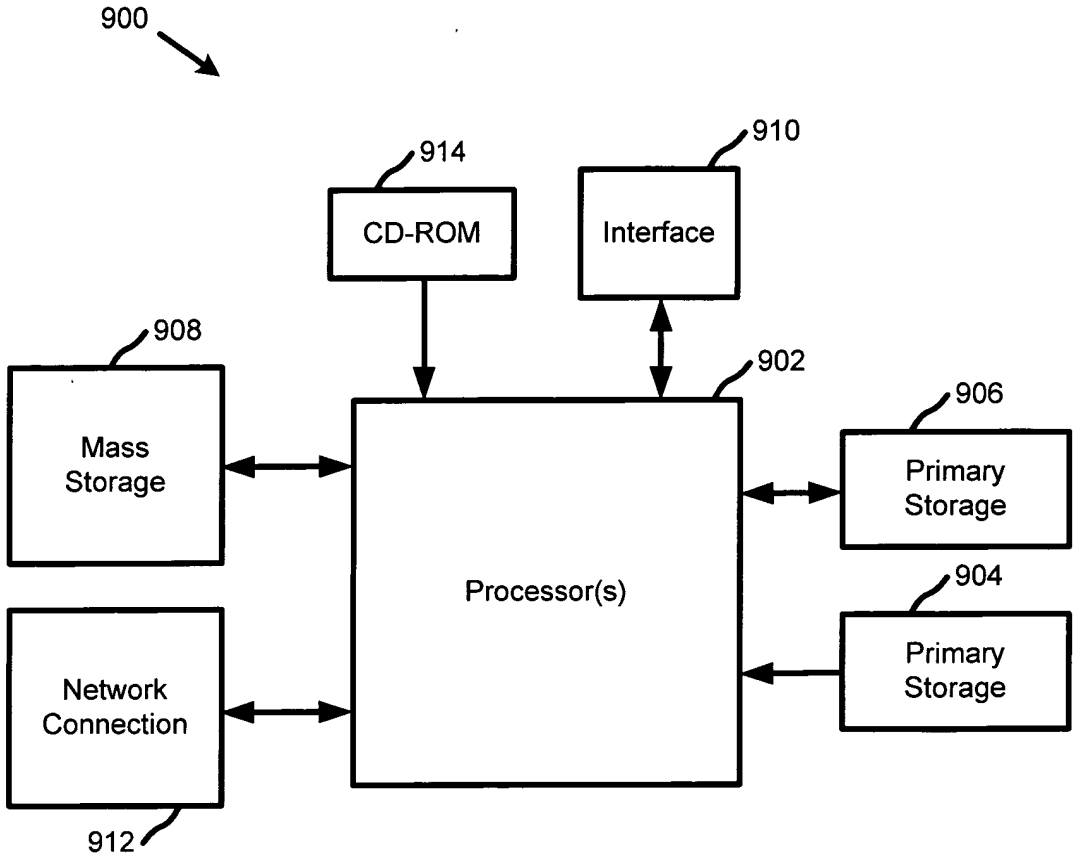

900
914
CD-ROM
910
Interface
908
Mass Storage
902
906
Primary Storage
Processor(s)
904
Primary Storage
Network Connection
912

FIG. 23